

water, attention is directed to the references given in the footnotes which describe an apparatus which will give a continuous record of sea-water salinity from a moving vessel. This instrument in conjunction with an instrument to record temperature, which has been constructed, would give the three most important physical variables of sea water, namely, temperature, salinity, and density. Such records taken regularly over the same course would show monthly and yearly variations of these physical properties which might be of much scientific value.

### ETHER DIFFERENTIAL RADIOMETER.<sup>1</sup>

By W. H. DINES.

[Reprinted from *Science Abstracts*, 1921, 24 : 216.]

The instrument consists essentially of a sensitive differential thermometer formed by two test tubes, each containing a few drops of ether, mounted with their axes in a horizontal line and communicating with each other by a U-tube containing ether to form a pressure gage. A metal shield is placed around each tube, with a horizontal slit to admit radiation. The direction from which radiation is admitted to either tube can be controlled by rotating the appropriate shield about the common axis.

*Method of use.*—There are two ways of using the instrument. In the direct method radiation from a portion of the sky is allowed to fall on one tube while the other is exposed to a full radiator, a vessel containing water, the temperature of which is altered until a balance is obtained. The equivalent radiative temperature of the sky (i. e., the downward radiation from the atmosphere) is then equal to the temperature of the full radiator. In the indirect method, instead of altering the temperature of the full radiator, the tube exposed to the sky is allowed to receive radiation from a second full radiator, of constant temperature, so placed as to effect a balance. A simple calculation then gives the equivalent radiative temperature of the sky.—M. A. G.

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### SIMPLE MAXIMUM ANEMOMETER.<sup>1</sup>

By P. L. MERCANTON.

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It is often desirable to have instrumental evidence as to the maximum force attained by the wind during a gale, and for this purpose a simple, inexpensive maximum anemometer would be useful. The principle of the Pitot tube suggests itself. Three forms of the instrument have been designed. The first two necessitate the employment of a Dines vane communicating with a manometer. In the first this consists of a U-tube containing oil. The difference between the static and dynamic pressure of the air displaces the oil in the tube, and the farthest point reached is marked by a glass index acting like that in a minimum thermometer. In the second form a metallic Bourdon-Richard manometer is used, recording by a light pivoted index. The third instrument is cheaper, but less accurate. It consists of a glass reservoir with two tubes leading out of it, one vertically and

the other obliquely, and at the top each tube has a shore horizontal extension, in the plane of the two tubes. The whole is mounted on a vertical pivot and swings with the wind, so that the horizontal extension from the vertical tube faces the wind. The reservoir contains oil, which also enters the lower part of the oblique tube. During wind the oil is consequently forced up the latter, which has at intervals small pockets. These retain small drops of oil when the main body recedes, and the highest pocket so filled marks the approximate height to which the oil ascended, and hence gives an approximate measure of the force attained by the wind. [The diagram illustrating the instrument appears to be printed upside down.]—M. A. G.

### AMERICAN METEOROLOGICAL SOCIETY MEETING IN WASHINGTON, APRIL 20-21, 1921.

The fifth meeting of the American Meteorological Society was held, amid flag-bedecked surroundings, at the central office of the Weather Bureau on the evening of the 20th and morning of the 21st. There were 21 papers on the program, 3 of which were read by title. One of these papers was published in the *March Review*, one and abstracts of two others are in this *Review*, and it is expected that the others will appear in full or in abstract in early numbers of the *Review*.

Various phases of aerological work, particularly (1) making of wind-aloft observations, with free balloons, with kites, and clouds; (2) studying the data; and (3) distributing current aerological information and forecasts for aviators by radio. Some aspects agricultural meteorology, mathematics in meteorology, new instruments, and measurements of sky brightness were presented. Those present were particularly fortunate in hearing Dr. John Paraskévopoulos, of Athens, Greece, tell about the meteorological service in Greece. He was spending two months at the central office studying methods and equipment of the Weather Bureau.

A more complete account of the meeting will found in the May or June, 1921, *Bulletin of the American Meteorological Society*.—C. F. B.

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### THE ARTIFICIAL CONTROL OF WEATHER.

By Sir NAPIER SHAW.

[Abstract reprinted from the *Meteorological Magazine*, April, 1921, pp. 60-63; with excerpts inserted from *Aeronautics*, Apr. 7 and 14, 1921. Reprinted also in *Aerial Age Weekly*, May 9, 1921, pp. 203-205.]

On March 9th Sir Napier Shaw delivered a lecture on the artificial control of weather before the Cambridge University Aeronautical Society. A résumé of the lecture is given below.

"The control of weather has been a subject of vivid interest from the dawn of history down to the present day. It is woven into the fabric of every form of civilization. The claims of the rain-maker are in some cases modern; but they are not exclusively modern, and are not to be regarded as one of the many signs of the progress of physical science in civilized nations. \* \* \* Quite deep down in human nature is apparently the feeling that if man can not himself control the weather, at least he knows who or what can; and he can bring influence to bear upon the spirits of the air that will guide the control in the manner desired." Few subjects of speculation are more inter-

<sup>1</sup> Jour. Roy. Met. Soc., London, Oct., 1920, 46:399-405; discussion, 405-406.  
<sup>2</sup> *Archives des Sciences*, 2 : 511-513. Nov.-Dec., 1920.